

DETAILED ACTION

1. The following FINAL Office Action is in response to Applicant's submission received July 24, 2008. Claims 2, 3, and 12-14 have been amended. No claims have been canceled. Claim 23 has been added. Therefore, claims 1-23 are pending.

Response to Amendment

2. The 35 USC § 101 rejection of claims 12-22 is withdrawn in light of Applicant's amendment making clear the claims fall under the statutory class of article of manufacture.

3. The 35 USC § 112 ¶ 2 rejection of claim 2 is not withdrawn in light of Applicant's amendment. While the grouping/removing/extracting relationship is now clear, the "production support projects" are still not clear, nor is it clear how they relate to the selection criteria.

4. The 35 USC § 112 ¶ 2 rejection of claims 3-4 and 13-15 are withdrawn in light of Applicant's amendments to the claims making clear the scope of the claims.

Response to Arguments

5. The 35 USC § 112 ¶ 2 rejections of claims 5, 7, 16, and 18 are not withdrawn in light of Applicant's arguments. Applicant's arguments were not found persuasive.

Claims 5 and 16: Applicant argues that "correlate" is clear. However, Applicants misuse a term that is well defined in the art. Descriptive statistics, in their

common usage, do not correlate anything. They cannot be "applied" to correlate anything. Only correlations correlate. Correlations indicate the strength and direction of a linear relationship between two random variables. Descriptive statistics describe one random variable and include, for example, mean, median, mode, standard deviation, range, etc. The descriptive statistics of two random variables may be used to calculate a correlation between the variables, but Applicant has not properly claimed this use. Applicant would have to set out the data that is correlated, such as to know which random variables are being correlated. Because Applicant has not put forth any explanation as to what the scope of the claim is, the Examiner will not apply speculative judgment as to the intention of this claim.

Claims 7 and 18: Applicant argues that claims 7 and 18 are clear. However Applicants have neither attempted to point out how the claims are clear, nor amended the claims (as appears to be suggested) to make them clear.

6. The 25 USC § **103 rejection** of claims 1-22 as unpatentable over Nembhard et al., "A Real Options Design for Product Outsourcing," in view of Official Notice is **not withdrawn** in light of Applicant's arguments. Applicant's arguments were not found persuasive. Applicant argues:

- I. The Official Notice regarding the "extracting" step of claim 1. **Arguments** at 10-12.

- II. The "selection criteria" element of claim 1 was not properly accounted for. Arguments at 11.
- III. The Official Notice regarding the "removing" steps of claim 2. Arguments at 12.
- IV. The Official Notice regarding the data validation of claim 3. Arguments at 14.
- V. The Official Notice regarding the data training of claim 4. Arguments at 14.
- VI. The rejection of claims 7, 8, 18, and 19. Arguments at 15.

Regarding argument I, the Examiner respectfully disagrees. Examiner's Official Notice provides a structure equivalent to that claimed by Applicant. Claimed elements need not be found in the prior art using exact language, but by equivalent structure. In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). In this way, Applicant cannot hide commonplace ideas with overdressed verbiage.

Applicant's "extracting" step, if re-written in plain, common terms simply requires: the extracting of some particular data [first set of empirical data based on selection criteria] from a larger body of data, the data somehow associated with software applications. It is noted that all data stored in a computer is associated with software applications because data can only be manipulated by software applications. Because data is manipulated by software, it is associated with software. Further note that software is always used by clients such as people or computers.

Data mining is a large, well-known field of computer science. Data mining is defined as the "extraction of interesting information or patterns from data in large databases." See Lecture Notes, Ch. 1, slide 5 (note that these notes are from a 100-level basic computer science course). The "interesting information" is the particular data pulled from the larger data set. Note that the definition of data mining and the plain meaning of the "extracting" element of the claims are equivalent.

In the previous Office Action mailed April 25, 2008, the examiner took official notice that it was old and well known to "generate inputs for a model using empirical data." One such way to generate inputs for a model is data mining. For example data mining is often used to generate statistical models. Lecture Notes, Ch. 7, slide 7. Therefore, data mining [e.g. claim 1's extracting step] is a well-known method to generate inputs for a model.

In regards to Applicant's argument that official notice was improperly used to "fill in the gaps" of Nembhard, the examiner notes that data extraction in a data mining application is of such notoriety that it properly fills the gaps of Nembhard. This is because, as pointed out above, data mining is well-known technique of extracting data for use in modeling. Further, Applicant cannot assert that the "extraction" is anything other than old and well-known in the art because Applicant's specification provides no written description of the steps required for extraction. Applicant's specification consistently refers to extraction without explanation as to what extraction is or how it is done, such that Applicant is clearly assuming one or ordinary skill in the art already knows what extraction is. If Applicant considered "extracting" to be anything other than

well-known, an explanation of what "extracting" meant and how to make and/or use the claims reciting the "extracting" element would be required by § 112 ¶ 1. Because no such description of "extracting" is given in the specification, it is clear that Applicant intends the "extracting" step to merely "fill in the gaps" of the inventive concept of the invention, and official notice of this step is appropriate.

Regarding argument II, the Examiner respectfully disagrees. The purposeful extraction of data automatically considers the use of selection criteria. For example, "extract this data" uses the criteria that "this" data be extracted. "Extract all data" requires "all" data be extracted. Therefore, any extraction of data, unless it is random, must use some kind of selection criteria. In Nembhard, the data used is "historical."

Regarding argument III, the Examiner respectfully disagrees. Removing unwanted data is of such notorious character that Official Notice of it is proper. Removing unwanted data is commonly referred to in the art at "data cleansing," "data reduction," or "data preprocessing." See Lecture Notes, Ch. 3, slides 5 & 6. Data that is commonly removed is redundant data, i.e., data that represent the same thing. See McCallum at 176, 2nd col ¶ 2. Therefore, it is clear that removing unwanted data is old and well-known.

Regarding arguments IV and V, the Examiner respectfully disagrees. Data validation and training is of such notorious character that Official Notice of them is proper. See e.g. Lecture Notes, Ch. 7. As is commonly known in the art, data test sets and data training sets are used to both create and fine-tune a model. These two sets are independent from one another. Lecture Notes, Ch. 7, slide 6. The data training set

takes a portion of the data to create a model. Lecture Notes, Ch. 7, slide 7. On the other hand, the data test set takes a portion of the data to test [i.e. validate] the model. Lecture Notes, Ch. 7, slide 8.

The steps in claim 3 are commonly referred to in the art as "data testing." These steps, as shown above, merely describe what is already known in the art. Therefore, it was proper to take Official Notice of the steps.

The steps in claim 4 are commonly referred to in the art as "data training." These steps, as shown above, merely describe what is already known in the art. Therefore, it was proper to take Official Notice of the steps.

In regards to Applicant's argument that official notice was improperly used to "fill in the gaps" of Nembhard, the examiner notes that data training and validation are of such notoriety that they properly fill the gaps of Nembhard. This is because, as pointed out above, data training and validation are well-known techniques of preparing and testing a model. Further, Applicant cannot assert that the training and validation are anything other than old and well-known in the art because Applicant's specification provides no written description of particular steps required for a particular type of training and/or validation, other than what is already known. Applicant's specification consistently refers to the data training and validation without explanation as to any particular steps involved, such that Applicant is clearly assuming one or ordinary skill in the art already knows how to perform data validation and testing. If Applicant considered data validation and testing to be anything other than well-known, a description of the particular steps would be required by § 112 ¶ 1 to support such a

unique method. Because no such specific steps are given in the specification, it is clear that Applicant intends the data validation and training steps to merely "fill in the gaps" of the inventive concept of the invention, and official notice of the steps are appropriate.

Regarding argument VI, the Examiner respectfully disagrees. As noted in the § 112 ¶ 2 rejection below, the Examiner will not speculate as to the intention of this claim. Therefore, the Examiner cannot at this time respond to the arguments because they are about a claim that is not clear.

7. The Examiner would like to note the requirements for traversing official notice from MPEP § 2144.03:

To adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR 1.111(b).

If applicant does not traverse the examiner's assertion of official notice or applicant's traverse is not adequate, the examiner should clearly indicate in the next Office action that the common knowledge or well-known in the art statement is taken to be admitted prior art because applicant either failed to traverse the examiner's assertion of official notice or that the traverse was inadequate [emphasis added].

Because Applicant has not specifically pointed out any errors in the Examiner's action, the officially noticed facts in the April 25, 2008 Office Action are deemed admitted prior art. While Applicant has attempted to traverse the official noticed facts in

claims 1-4, such traversal was inadequate because they merely concluded that the fact was not considered to be common knowledge without specifically pointing out why the fact was not well known, as is required by Office procedure. However, the Lecture Notes reference has been provided to speed prosecution.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. **Claims 2, 7, 8, and 13-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

As to claim 2, it is still unclear what the "production support projects" are or how they relate to the "one or more selection criteria." The specification provides no guidance as to what these particular projects are, or how they relate to selection criteria. Therefore, the Examiner will construe these projects to be unwanted data.

Further, the Examiner notes the claim was amended responsive to the previous § 112 ¶ 2 rejection regarding the grouping/removing/extracting distinction. The Examiner is construing there to now be two removing steps, one for data "concurrently used by more than one project" and one for the above-mentioned unwanted data. The "grouping" step, however appears to be a simple rehash of the "extracting" step of claim 1, and does not appear to further limit the scope of the claim. If there is a particular step meant by "grouping," it should be explicitly or more clearly claimed.

As to claims 7, 8, 18, and 19, the sentence's grammar is unclear making it impossible to determine what the second set of data comprises. There are two "and"s to the list, when 'and' is generally only used for the last item in the list. Further, it is not clear if Applicant requires each item the list to be in the data, or if one or more items need be in the data. Applicant has specifically rejected the Examiner's previous interpretation of the claim. See Applicant's arguments at 8-9. Therefore, the Examiner is not sure what the scope of the claim is and will not apply speculative constructions of the meaning of this claim.

As to claims 13-22, the claims refer to the "software" of claim 12, but claim 12 is a computer readable medium.

As to claim 23, the "applying" step is redundant in view of the "extracting" step of claim 1 from which this claim depends. Claim 1 already applies selection criteria to the empirical data in the "extracting" step. Claim 23's "applying" step is identical. Therefore, will only consider the "prior to extracting" limitation of the claim.

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
11. **Claims 1-23 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Harriet Black Nembhard et al., "A Real Options Design for Product Outsourcing," Proceedings of the 2001 Winter Simulations Conference (B.A. Peters et al., eds. 2001) (hereinafter Nembhard), in view of Examiner's Official Notice as evidenced by Andrew

Kusiak, "Lecture Notes for 56:138 Knowledge Discovery and Management - A Data Mining Class," (Iowa University 2001) (hereinafter Lecture Notes) and Andrew McCallum et al., "Efficient Clustering of High-Dimensional Data Sets with Application to Reference Matching," Proceedings of the sixth ACM SIGKDD international conference on Knowledge discovery and data mining, pp. 169-178 (Boston 2000) (hereinafter McCallum).

As to claim 1, Nembhard discloses a computer-implemented method for estimating the feasibility of outsourcing information technology services (see Abstract), comprising:

aggregating at least a portion of the extracted data (see equation 1, noting a formula aggregates data);

creating a statistical model of the historical portfolio based on the first set of data (see equation 1, noting a model of how the part of a final product [portfolio] is made based upon historical data);

generating a simulated portfolio based at least in part on the statistical model (see section 4 - Monte Carlo Simulation, noting that a simulation of the portfolio is done);

generating a cost estimate associated with outsourcing technology services based at least in part on the simulated portfolio and a second set of data, at least a portion of the second set of data containing empirical data, the empirical data containing data and assumptions relating to the historical portfolio (see Fig. 1, noting that the

outsource cost is generated in the simulation, the data in the simulation coming in part from assumptions relating to the portfolio by way of the model's variables); and

determining the feasibility of outsourcing technology services based at least in part on the cost estimate (see Fig. 1, noting that a comparison is made between the outsourcing and production costs).

Nembhard fails to explicitly disclose extracting, based on one or more selection criteria, at least a portion of a first set of empirical data associated with one or more software applications in a historical portfolio, the historical portfolio containing software applications utilized by a client. Instead, Nembhard takes in a variety of inputs defining the historical portfolio based on descriptive statistics. See Fig. 2.

However, the Examiner previously took Official Notice that it is old and well known to generate the inputs for a model using empirical data. One such way to generate inputs for a model is data mining. For example data mining is often used to generate statistical models. Lecture Notes, Ch. 7, slide 7. Therefore, data mining [e.g. claim 1's extracting step] is a well-known method to generate inputs for a model.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention for a user of Nembhard to generate the inputs for the model using at least a portion of a set of empirical data in order to generate inputs that reflect real world experiences with predictable results.

As to claim 2, Nembhard fails to explicitly disclose that data used by more than one project is selected and removed. However, the Examiner previously took Official Notice that it is old and well known to remove undesired data from data sets. Removing

unwanted data is commonly referred to in the art at "data cleansing," "data reduction," or "data preprocessing." See Lecture Notes, Ch. 3, slides 5 & 6. Data that is commonly removed is redundant data, i.e., data that represent the same thing. See McCallum at 176, 2nd col ¶ 2.

It would be apparent to one of ordinary skill in the art to remove data that is corresponding to more than one client project because that data represents more than one thing, with the predictable result of removing data that would have a skewing affect on the data. Further, it would have been apparent to one of ordinary skill in the art to remove other unwanted data, such as production support projects, with the predictable result of removing data that has no value. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention for a user of Nembhard to remove undesired data from the data set, such as data used by more than one project, for the purpose of not skewing data.

As to claims 3 and 4, Nembhard fails to explicitly disclose that a subset of data is used for validation/training. However, the Examiner previously took Official Notice that it is old and well known to validate/train statistical models using a subset of data. As is commonly known in the art, data test sets and data training sets are used to both create and fine-tune a model. These two sets are independent from one another. Lecture Notes, Ch. 7, slide 6. The data training set takes a portion of the data to create a model. Lecture Notes, Ch. 7, slide 7. On the other hand, the data test set takes a portion of the data to test [i.e. validate] the model. Lecture Notes, Ch. 7, slide 8.

It would have been apparent to one of ordinary skill in the art to verify that the model used was appropriate for the data it was intended to work with by testing the model using actual data to achieve the predictable result of determining if the model gives realistic results. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention for a user of Nembhard to validate/train the chosen model for the purpose of not using a bad model.

As to claim 5, Nembhard discloses that analyzing comprises applying descriptive statistics to correlate the aggregated data (see Fig. 2, noting that Nembhard starts with the analyzed data in descriptive form).

As to claim 6, Nembhard discloses retrieving application selective offering (ASO) information, the ASO information containing information regarding the services provided by a provider relating to the management and maintenance of a software applications portfolio, the ASO information and the statistical model being used to generate the simulated portfolio (see Fig. 2, noting that the cost of contracting to the outsourcing services provided for the outsource).

Claims 7 and 8 have no apparent meaning, and none will be speculatively applied. See In re Steele, 305 F.2d 859, 134 USPQ 292 (CCPA 1962) (it is improper to rely on speculative assumptions regarding the meaning of a claim and then base a rejection under 35 U.S.C. 103 on these assumptions).

As to claim 9, Nembhard discloses generating a provider cost build-up estimate associated with the simulated portfolio (see Fig. 1, noting "outsource cost," "unit

outsourcing price," and "unit delivery cost," which provide the cost estimate of outsourcing).

As to claim 10, Nembhard discloses generating a client price estimate associated with the simulated portfolio (see Fig. 1, noting "outsource cost" which is the estimate of a client's outsource price).

As to claim 11, Nembhard discloses calculating a solution feasibility index associated with the cost estimate; and comparing the index to one or more feasibility ranges (see Fig. 1, noting that an outsource cost is compared to a production cost, both serve as indices when compared).

Claims 12-23 are rejected for similar reasons as claims 1-11.

As to claim 24, Nembhard fails to explicitly disclose prior to extracting the extracted data, collecting and storing the empirical data associated with the one or more software applications in the historical portfolio in a database. However, the Examiner takes Official Notice that it is old and well known to collect and store empirical data in a database. The storage of relevant data in a database will allow for that data to be stored in a predictable and logical manner. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to collect and store relevant data, such as the historical data in Nembhard, in a database prior to extracting the data, with the predictable result of having the data available for data mining.

Conclusion

12. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM V. SAINDON whose telephone number is (571)270-3026. The examiner can normally be reached on M-F 7:30-5; alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/wvs/

/Beth V. Boswell/

Supervisory Patent Examiner, Art Unit 3623